

## **Peninsular Florida Landscape Conservation Cooperative (PFLCC) Climate Scenarios and Species Vulnerability Assessment (USGS Peninsular Florida LCC funds)**

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**Overview:** The Peninsular Florida Landscape Conservation Cooperative (PFLCC) is one of the most vulnerable regions to climate change in the U.S. Its low elevation makes it very susceptible to sea level rise and its fragile ecosystems are sensitive to changes in temperature and precipitation. Some of the potential risks include population displacement, loss of economic assets, critical infrastructure failure, and an increased occurrence or severity of natural disturbances such as hurricanes and droughts. In addition to the threats posed by climate change, the population of the PFLCC is potentially going to double in the next 50 years, requiring as much as 1.7 million acres for urban land use. This demand will create unprecedented landscape changes that will produce significant challenges to ecological systems and human populations. Given the region's complex socioeconomic and ecological dynamics and the large number of governing agencies involved in conservation planning, the key research component is to create an appropriate framework for LCC-scale decision-making across current conservation planning agencies and jurisdictions.

**Project Goals:** The project will develop tools that will provide decision support to the US FWS and the PFLCC stakeholders and steering committee to guide conservation.

**Deliverables and Timeline:** This is a two-year project that builds on an MIT project "Assessing the challenge of climate change in the greater everglades ecosystem" which developed future regional scenarios for the US FWS and USGS. Project work will begin in November 2011, with an expected completion date of September 3013.

### **Year 1**

- Create a revised series of alternative future scenarios that reflect the PFLCC geography
- (including four major drivers: climate change, population pressure, public financial resources, and planning policies)
- Conduct meetings or stakeholder workshops in added counties
- Conduct indicator species selection workshop and investigation with FWS and USGS scientists and managers
- Geographic data acquisition and processing (new parcels, land values, census 2010, LIDAR terrain, etc.)
- Quantitative analyses and research for scenario components
- Preliminary integration of Elvies vegetation succession model outputs

### **Year 2**

- Public release of PFLCC scenarios and supporting documentation
- Development of preliminary impact assessments together with species experts and external modeling teams
- Scientific workshop to explore species vulnerabilities under scenarios
- Development of a comprehensive spatiotemporal vulnerability assessment for the representative species selected in year 1
- Development of "Incentives analysis" with report to FWS. What is the potential scope of incentives, including geographies and stakeholder analyses.
- Dissemination of the project results through workshops, presentations and preparation of peer review publications